

FEEDBACK

AUGUST 2017

July Brings New Faces to JCRAC Meetings



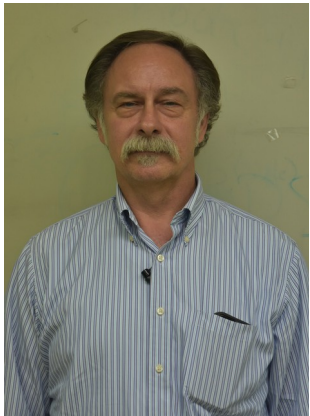
Kevin Morse - KEØKVU



Jesse Snow - NY2KC

July brought seven first-timers to JCRAC meetings.

Kevin and Jesse (top row) saw the Field Day wrap-up on July 14.



Steve Ponnath - KKØSJP



Steven King - NØYST

Steve, Steven, Josph, Chris and John came on July 28 to hear Brian Short, KCØBS talk about unusual uses of APRS.



Joseph Stamper - W4NRA



Chris Miller - KCØMIL



John Title - QØJWT

JULY MEETINGS

Aug 11 -- ARRL section manager Ron Cowan

Aug 25 -- Foxhunt -- gather at the church parking lot beginning at 6:30 p.m.

The Johnson County Radio Amateurs Club normally meets on the 2nd and 4th Fridays of each month at 7:30 PM at the Overland Park Christian Church (north entrance), 7600 West 75th Street (75th and Conser), west of the Fire Station.

Much of the membership travels to the Pizza Shoppe at 8915 Santa Fe Drive for pizza buffet and an informal continuation/criticism/clarification of the topics raised at the meeting ... or anything else.

LEAVE THE CHURCH, TURN RIGHT (WEST) ON 75TH. TURN LEFT (SOUTH) ON ANTIOCH. TURN RIGHT (WEST) ON SANTA FE. PIZZA SHOPPE IS JUST PAST THE SONIC ON YOUR LEFT.

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-> FEEDBACK <-

*A publication of the
Johnson County Radio Amateur Club, Inc.*

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* * *

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All email addresses are available at w0erh.org



JCRAC president Bill Gery, WA2FNK (second from left), presents certificates of appreciation to Chip Buckner, ACØYF (left), Deb Buckner, KDØRYE (to Bill's right) and Charlie Van Way, NØCVW (right), for their work on the Feedback. [Ed. --Thanks. It's a pleasure.]

And, if you're wondering about Hambone's brain teaser, Jaimie reports that Hambone set the ohmmeter to its diode checker function and connected the (-) lead to the transistor's collector and the (+) lead to the emitter. Remember, he found that this is a PNP transistor.

The meter displayed *overflow* as it should because it saw an open circuit.

Hambone then moistened two fingers (i.e. spit on them) and placed one on the transistor's base pin and the other on the collector. The meter read about 1.6 volts indicating that the base was controlling the collector-emitter current. Therefore, the transistor had gain.

PRESIDENT'S CORNER

What an out pouring from the Ham community as word spread (very quickly I might add) of the accident I had on the way to the Warrensburg Ham fest. By the time I returned home there were several emails awaiting me. All asked if I was all right and with the offer of help. This is a real testimony



to the caring and ready to assist culture that is the Amateur Radio community. There were no injuries either to myself or those in the car. Everyone was wearing seat belts and the two smallest children properly seated in car seats.

As for the Jeep, which bore full impact to the right side, there was hope at first that the damage could be corrected. I found out, however, that was not the case and the humane thing was to follow Colonel Potter (MASH) lead with the Jeep. Thanks to all that reached out to me with concern and offers of help.

The ham community was active following the storms that brought down so many trees and limbs. Overland Park Emergency Management asked for the use of the club's 29 repeater to help with the cleanup. Hams were very active using simplex to support the clear up efforts, both during and after the storms.

Mark your calendar for the annual Ensor Auction. The events will start Friday evening October 27th with the campfire and camp out. The auction will be Saturday October 28th starting at 11 am. So it is time to look through your shack and select the item that needs a new home.

- Bill Gery - WA2FNK

Johnson County Radio Amateurs Club - July 14, 2017

Attendance: Self introduction with name and call sign. 33 signed the check in sheet. This was followed by the Pledge of Allegiance.

Due to Field Day there were no Minutes from the last meeting.

There was no Treasurer's report.

Old Business:

- We welcomed all first time visitors to the Club meeting.
- Field Day Food donations totaled \$595.18
- Repeater Update – The 145.29 Repeater is exposed to excessive heat during the summer. Remember to keep use of this repeater light during the afternoon hours. We lost our location for the 443.725 Repeater. This repeater was located on top of the Black and Veatch building. Also this Repeater's PA is dying. As an FYI, it was built in the early 80's. We are currently looking for another location.

New Business:

- In recognition for their work on the Club's Newsletter, Chip Buckner ACØYF, Deb Buckner KDØRYE, and Charlie VanWay NØCVW were presented with Certificates of Appreciation.

Reports:

- 6 m – NR.
- 10 m SSB Roundtable – 3 participated on July 13.
- 40m SSB Roundtable – 8 participated on July 12.
- 440 Wheat Shocker net – 7 Check-ins on July 12 and 13 Check-ins on July 5.
- 2m Wheat Shocker net – 21 Check-ins on July 13 and 21 Check-ins on July 13.
- HF Activity – NR.

Announcements:

- Technician Class July 22 and 29. Hamclass.org for info.
- Warrensburg Hamfest July 15.
- WW1USA July 22 and 23.
- Watch Larry's List for upcoming events.

Business meeting adjourned at 8:05PM

Program:

- The Program for this evening was a Field Day 2017 video by Hambone, Dude, and Joey. We also heard recaps from the Station Captains.

Johnson County Radio Amateurs Club - July 28, 2017

Attendance: Self introduction with name and call sign. 38 signed the check in sheet. This was followed by the Pledge of Allegiance.

The Minutes from the July 14, 2017 meeting were read and accepted with one opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand	\$ 131.00	Repeater Operating Reserve	\$ 1,130.65
Checking Account	\$ 373.42	Memorial Fund	\$ 310.00
Savings Account	\$ 9,408.83	Active Members	155
PayPal Account	\$ 38.54		
Total	\$ 9,951.79		

Old Business:

- We welcomed all 1st time visitors to tonight's Club meeting.
- Repeater Update – All are working well. No news on a new location for the 440 Repeater.
- WW1USA next event is October 14 and 15. It will be sponsored by the Raytown ARC.

New Business:

- The Salvation Army SATERN Communication Van is in need of donations. Bill Gery, KA2FNK will check with Rich Britain, NØENO SATERN Divisional Coordinator to see what exactly is needed. Bill will report back to the Club. Also, Tom Wheeler, NØGSG has offered to look at the Communication Van's HF Rig to make sure it is working properly.
- A proposal was made to make the Wednesday night Wheatshocker Net a Fusion Digital Net while we find a new location for the 440 Repeater. Tom Wheeler, NØGSG has volunteered to be Net Control. More information to follow.

Reports:

- 6 m – Open to Oregon, Maine, North Carolina, New Mexico, and Arizona.
- 10 m SSB Roundtable – 7 participated on July 27
- 40m SSB Roundtable – 8 participated on July 26.
- 440 Wheat Shocker net – No Nets due to 440 Repeater being off the Air.
- 2m Wheat Shocker net – 19 Check-ins on July 27 and 14 Check-ins on July 20.
- HF Activity – None.

Announcements:

- Watch Larry's List for upcoming events.

Business meeting adjourned at 8:03 PM

Program:

- The Program for this evening was a presentation by Brian Short, KCØBS on "The 10 things you didn't know you could do with APRS".

A Hambone Adventure - Jaimie Charlton, ADØAB

Hambone and the Pot Pinger

“Dude, how did you pull this off? It’s so cool! A trip to the Clear Blue Water Dive Academy right here in Tampa, all free! I’ve never used such nice scuba equipment before. This Sherwood computer is state-of-the-art.” I asked my little brother as we bounded over the smooth water of Tampa Bay in forty feet of beautiful gray-green cigarette boat.



“Well, big brother, it’s just that I have friends in high places. Or, here it’s low places because we’ll be under water,” replied Dude.

“No Dude, seriously, how’d you do it?”

“It’s all due to you, Hammy, and your expertise in audio electronics. This trip is not really a belated birthday present from Unck as you might have been led to believe.”

“What?”

“Oh, yeah. I didn’t tell you before because you wouldn’t come. But, we’re here to work.”

“Work?” I asked.

“Yes. We’re here to help Bill, he’s the guy driving the boat, perfect his new invention, an underwater PA system.”

I guess Bill knew we were talking about him because he waved and we waved back.

“Tell me, Dude, why does he think we can do something for his invention?”

“Not we, bro, you. “I got to know Bill when he ran that diver certification class back home a few

months ago. He said I was his best student. I’m a natural, he said. Anyway, we were chatting over

Echolink and he explained that one problem with running dive classes is being able to speak to the students when they’re under

water. So, he made an underwater PA system. But, it doesn’t work very well.”

“What’s the problem?” I asked, rising to the bait of an unsolved electronics mystery.

“His students say it often sounds garbled and not loud enough. He tried to fix it, but he doesn’t really understand electronics or sound. That’s where you come in.

I told him my bro, that’s you, is at the state university’s school of electrical engineering and knows a lot about circuits. Bill said that an engineer is just what he needs to figure this out and wondered if you might be interested.”

“But Dude, I’m not an engineer, yet.”

“I didn’t say you were. I just didn’t say you weren’t. Little brothers like to brag, you know. That’s when I added that you were also a certified diver.

“I got really interested when he offered to fly both of us out here to help him. In fact, I agreed for both of us and that’s how we got here.”

“Dammit Dude! I wish you’d stop trying to arrange things.” I snarled, even though I’m glad he did. You

can’t let younger brothers think they have the upper hand.

“What if we can’t fix his problem?”

“We’ll soon find out. It looks like we’re at the dive site and Bill’s motioning for us to jump in. See ya below!” said Dude as our two bodies encased in bright yellow wet suits flipped backward off the boat and into the clear blue water.

The change was electric. Instantly going from bouncing clumsily on the deck of a noisy boat to float free in crystalline water among Picasso-painted fish, Spanish dancers and other nudibranchs must be experienced to be believed.

Some people aspire to fly free like a bird. But birds work hard to fly and must always keep moving. Me, I like to float in this blue, gravity-free world. Just a slight kick is all it takes to move left or right or up and down.

“Can you guys hear me? Testing 1-2-3-4.” Snaps me out of my reverie.

“How does this sound? Here’s full volume, 1-2-3. Here’s half volume, 1-2-3. c’mon up and tell me what you think,” said our host.

Feeling the full burden of our tanks, we pulled ourselves onto the boat deck. Gravity reminded us that we were back to reality.

“So, what do you think?” asked Bill as he helped strip off our wetsuits.

see HAMBONE on page 6

from HAMBONE on page 5

“I think this is a great dive spot,” answered Dude. “The water’s clear and there’s thousands of fish. We may be too far north for coral, but that sunken ship makes a great artificial reef. The fish can’t tell the difference.”

“It is great, but I meant the PA system.”

Before Dude could gush any more, I responded, “Your students are right, it is distorted and not very loud – even at full volume. But we could still understand you.”

“Do you have any ideas what might be the problem?”

“The first thing I noticed is your clever, treasure chest-shaped speaker enclosure.”

“Yeah, the students love little gimmicks like that.”

Giving Dude a ‘what’s up with this guy look’, I continued. “From what I could see, it looks like the pressure underwater is slightly warping the box. Since the speaker is bolted tightly to the box, it gets warped, too, and that causes its voice coil to rub on its magnet.”

“That sounds bad,” hmmm’d Bill.

“Not really,” I continued, trying to sound smart. “All you have to do is loosen the speaker mounts a little. Maybe place some rubber grommets in the mounting holes so the box can warp without twisting the speaker.”

“That’s easy,” said Bill. “Is that all there is to the fix?”

“No, but it’s a start. We need to have a look at the amp, but that’s better done on dry land.”

“No sooner said than done,” said Bill.

With that, the boat gave forth a thunderous roar shaking and slamming its way back to the dock.

Deafened and beaten within an inch of our lives, Dude and I staggered ashore leaving Bill to carry his equipment into his boathouse, living quarters and workshop combination.

“That is some boat you’ve got there,” I offered trying to be friendly with our new host.

“Oh, it’s not mine. It belongs to this guy who needed a place to keep it. I offered my dock in exchange for using it for my diving school.

He was happy to agree because he only uses it at night on weekends.”

“It sure is cool looking,” said I still trying to be friendly.

“It is. That’s why I keep it out front with my sign. It really attracts potential customers.

But as you noticed, it’s a terrible ride. It’s like a super hotrod, fun for a while. But, if I didn’t have it, I wouldn’t have any boat.”

“That’s really a great deal for you,” I continued trying to learn a little more about Bill. “What does the owner use it for?”

“I’m not sure. He says he’s researching the night habits of a school of pompano that lives on a fairly shallow reef about five miles out. He’s always sort of vague about his work.”

“Let’s have a look at this amp,” said Dude changing the subject. “I bet Hammy will find trouble in no time.”

I always hate it when he says stuff like that because it means that there will be something weird wrong that I can’t figure out. But not this time.

“Look here,” I said, lifting off cover. “This heatsink with a power transistor has come loose and the connection to it is broken. See? The mounting nuts and bolts are rolling around in the chassis. I guess it wasn’t designed to take the pounding this boat gives it.”

“Do you think the transistor’s still good?” asked Dude.

“We can give it a quick test, hand me that ohmmeter.” I said, taking charge of what was beginning to look like prime problem solving hero material.

“First, we disconnect the base and emitter leads. The collector mounts directly to the heatsink so it’s already disconnected. Remember, a transistor electrically looks like two diodes back to back,” I said taking a lead from Uncle Elmer and making a sketch on a pocket yellow pad.

“Therefore, we should measure a high resistance between the emitter, E, and collector, C – and we do. The meter shows infinite resistance.

Next we switch the meter to its *diode checker* function to check the base to emitter diode. Look, with the base, B, negative and the emitter, E, positive the meter reads about 0.5 volts. Reversing the leads gives an overflow reading.

Now let’s do the same with the collector to base circuit. With the collector positive, we get a bit more than 0.5 volts and reversing the leads gives an overflow reading.”

“Does that mean the transistor is good?” asked Bill.

see HAMBONE on page 7

from HAMBONE on page 6

“Probably, if it has gain,” I pontificated. “It tells us that it isn’t shorted or burned open. It also tells us that it’s a PNP transistor,” I continued as I performed one more test to verify that the transistor actually had some gain. It did, so I reconnected the wires and remounted the heatsink.

“Let’s give it a try,” said Dude as he began to connect a microphone and speaker and wire the power leads to a convenient battery. “Testing 1-2-3. It sounds like the distortion’s gone. How’s that, Bill?”

“It’s much clearer, but it’s still not very loud. It was much louder before he modified it.”

“What do you mean, ‘he modified it’?” I asked feeling my hero status slipping away.

“Oh, sorry,” Bill replied. “The original amp is mine, but when the guy saw it he asked if he could add something he called a *pinger* to it. I said, sure. After all, he was letting me use the boat whenever I wanted.

But, his pinger doesn’t work,” continued Bill spreading out his hand-drawn schematic on the bench. “When I press this button, there’s no ping, just a loud click.”

With that the speaker jumped and gave off a loud, sharp, snap.

“Wow! That doesn’t sound good,” shouted Dude jumping back in case fireworks were to follow. They weren’t.

“Well,” I said, trying to regain control of the situation and restore my hero status. “It certainly didn’t ping.

What did the guy say he wants to use it for?”

“He said it’s to help locate and record interesting fish and other things underwater. He wants to use it with some microphones he’s installed in the bottom of the boat and an indicator thing that looks a little like radar. He’s stowed the indicator in the cabin.

I tried to use it, but it didn’t seem to make any sense to me. A rough diagram of the mics and stuff is here on the back of the schematic.”

“Hammy!” shouted Dude. “That looks just like the direction finder that that guy in the club, Tim, uses. Except it’s got microphones instead of antennas.”

“This isn’t radio, Dude, it’s water and sound.” I said still trying to keep the intellectual high ground.

But Dude was right. It looked a lot like Tim’s Doppler RDF system.

Later that afternoon I borrowed the schematic from Bill. I said I wanted to study it to see if there were any more problems. What I really did was send a picture of it to Uncle Elmer and ask him what it’s supposed to do.

Dude thought I was nuts wasting time with that when I could be cruising in that super-cool boat and hustling babes wrapped in bikinis on the beach. But, I did it anyway. Less than an hour later, the phone rings.

“Hammy, can you talk?” He didn’t say who he was, I guess I’m supposed to recognize his voice. I did. It was Uncle Elmer.

“Yes.”

“That thing you’re working on isn’t just a PA system, it’s an underwater locator. Dude was right, it’s similar to a radio direction finder. The pinger is working fine. It’s not

supposed to ping, it just sends out a sharp pulse that’s intended to make a resonator generate a ping. It’s like hitting a bell. The clapper, in this case the pinger, strikes the bell which continues to oscillate or ring at its resonant frequency. The mics pick up that sound and give the direction to the resonator.”

“How do they do that?”

“The same way the RDF does. The sound arrives at the different mics at different times. By analyzing the arrival times, the indicator can determine the direction the sound is coming from.

From the limited information on the drawings you sent me, I’d guess the system is designed to work at around 1000 Hertz. Remember, sound travels a little more than four times faster in water than in air so that works out about right given the microphone spacing.”

I am always impressed by Unck’s knowledge and this was no exception. So, I continued,

“I bet the resonator must be complicated to pick up the pulse and ping back.”

“Not at all. If you are working in shallow depths, just a tuning fork mounted in a paint can held down by a weight on a line will do the trick. The sharp pulse makes the tuning fork ring and that sound can be picked up by the mics. It’s not very sensitive. But it’s probably good for finding something hidden when you get within a hundred feet or so. Of course, the can must be water tight and not so deep that the pressure crushes it.”

see HAMBONE on page 8

from HAMBONE on page 7

“So, Unck, how does that guy record fish sounds with this?”

“I don’t think he does. Smugglers used to use a variation of this to transfer goods. One guy would drop contraband into some secluded part of a bay or cove and mark it with a tuning fork responder. Then, an accomplice would go to the spot, locate the responder and pick up the loot. That may be what the guy is doing.

If I were you, I’d stop working on that thing and come home.”

“Thanks, Unck. We will.”

We didn’t.

The next day I filled in Dude and Bill on what Unck said, hoping that Bill was not the accomplice.

They both agreed that we might be getting into some dangerous territory. Then Bill said, “Why don’t we test your Uncle’s theory? I know about where the guy goes. We could go out there in the daytime and see if we hear any pings.”

“What if he sees us?” I asked.

“He only takes the boat at night so I don’t think he’s around during the day. Anyway, I’m always taking students out so the three of us would not look unusual.”

I was reluctant to go, but Dude’s and Bill’s enthusiasm won me over. The next thing I knew, forty feet and 900 horsepower of cigarette boat was pounding our butts to the dive site. Finally, we arrived, turned off the engines and drifted with the incoming tide. When we’d gone what Bill thought was far enough, we started the engines and moved back out only to drift

again over a different spot. Of course, we kept pinging, but heard nothing.

Lucky, we brought a bag of McDonald’s and some bug spray. Both us and the bugs were getting pretty hungry.

“We got a ping!” shouted Dude pointing about twenty degrees off the port bow. “The indicator shows it’s over there!”

We grabbed the boat’s emergency oar and paddled in that direction. But, when we got to the spot, we were disappointed. Looking down through the shallow clear water, all we saw was seaweed.

“That’s a bummer,” I sighed.

“There’s nothing here.”

“It doesn’t look like it,” said Bill.

“But let’s go down and have a look as long as we’ve come this far. Maybe we’ll see what’s giving the ping.”

Snorkels bubbling, we finned our way to the bottom. There, tethered to a rock, was a can that rang when tapped. But the real surprise was the bottom itself. It was not the mossy floor we thought it was, but a huge clear plastic bag filled with what looked like pot (that was Bill’s and Dude’s assessment). It was weighted down with rocks, and from above, looked exactly like the seabed.

Back on the boat, “That’s gotta be a dope smuggling drop,” said Bill. “I saw five other bags down there just like the one with the can. They look big underwater, but I don’t think they weigh more than about 500 pounds each. A boat like this could easily tow them to a secluded beach where they could be picked up. There’s always rumors of smuggling going on down here, but

I never thought it was this close.”

“What should we do?” asked Dude.

“Let’s get out of here before we’re spotted,” I shouted. And with that, the mighty engines roared to life and bounced us back to the dock.

“Uh oh,” said Bill. “That’s the owner standing on the pier. You guys, play dumb.”

“What were you guys doing out on that reef?” the owner demanded.

“I was just giving these Kansas City guys a dive lesson,” replied Bill in his friendliest beach-boy manner. “They’ve never been in salt water before.” Bill seemed to be a really good liar.

“It’s unbelievable,” I offered. “So much clearer than the muddy lakes back home.”

“Well, stay away from that reef, I don’t want anything disturbing the fish I’m studying there.”

“Okay, no problem,” Bill agreed as the owner walked off.

“Do you think he believed us?” I asked.

“No.”

Bill was right. The next morning the boat was gone. I guess he wasn’t such a good liar after all.

“So, Bill, what happens now?” asked Dude. “I don’t think that guy is friendly and I don’t think we’ve seen the last of him.”

“Well, I could just pretend nothing happened and hope for the best although now I don’t have a dive boat. Of course, you never know what that guy will do. Or, I could call the police and tell them what we’ve found.”

see HAMBONE on page 8

from HAMBONE on page 8

“For Dude and me, Bill, we’re outta here. This is our last day and our plane leaves at noon.” I said trying to stay friendly but disconnect from this situation.

“All I can say is thank you guys very much. It was great meeting you and I really appreciate you fixing my amplifier. That guy took the unit with the boat, but the drawings are still back home so I can build another one. Maybe sell it with a pinger and paint can resonator as a diver tool,” said Bill. “Have a safe trip and thanks again.”

With that, Dude and I took a taxi to the airport, got on our plane and flew home anxious to share our adventure with anyone who would listen.

About six months later a text arrived.

“Dude, Bill down in Florida just texted me. He invited us to visit him again to see his new and improved Clear Blue Water Diving Academy. He says there’s two tickets waiting for us at the airport.”

“Bro, text him back saying we’re on our way.”

The next day, Bill met us at the airport in a new diving academy SUV. “You’ve gotta see my new boat,” he said. “It’s not as fancy as the cigarette boat, but it’s great for diving, and it has PA and pinger on it.”

Arriving at the dock, Dude and I were really impressed by Bill’s all new diving school. “Bill, You’ve must have really hit it big.”

“I did. I decided to take the moral high ground and called the police. It turned out that there was a big reward for turning that guy in and another reward for turning in those four big bags of weed.”

“That’s great, Bill. But I thought we found six bags.”

“We did.”

Quickie Brain Teaser

In the story, after verifying that the transistor wasn’t open or shorted, Hambone checked to see if the transistor had gain.

With only the tools mentioned – his ohmmeter – how did he do it?

The answer is elsewhere in this issue.

Raydo's Reviews

John Raydo, KØIZ, offers three websites that may be of interest to FEEDBACK readers.

The magazine *Morsum Magnificat*, published in 89 issues between 1986 and 2004, covered every conceivable aspect of Morse telegraphy, past, present, and future. The copyright holder, Zyg Nilski, G3OKD, has now made it available for free download [Ed.--for personal use] in PDF format. Go to <http://www.n7cfo.com/tgph/Dwnlds/mm/mm.htm>

Radio Shack sadly is no more. Started by two bothers in 1921, it sold leftover WW1 Army radio gear out of a single store in downtown Boston. Bill Halligan, founder of



Hallicrafters, suggested the name RadioShack. It was the term for the radoroom on ships. The history of RadioShack encompasses the growth of our hobby, Hi-Fi, and micro computers.

Until recently most of us did some shopping at one of the local Radio Shacks. We even might have been on the mailing list for their catalogs--ham radio gear, resistors,connectors, antennas, and so forth.

The first catalog came out in 1939. That very first catalog can be viewed at http://www.radioshackcatalogs.com/catalog_directory.html. The site has a fabulous collection of other catalogs, computer catalogs (TRS-80!), instructional videos, Allied Radio catalogs (once owned by Radio Shack), and much more. Check it out!

Finally, vox.com has an interactive website that shows what the upcoming solar eclipse will look like in various places at various times. Go to <https://www.vox.com/science-and-health/2017/7/25/16019892/solar-eclipse-2017-interactive-map> and enter your zipcode.

